Claims

What is claimed is:

1. A method comprising a step of:

eluting a HPLC column, which is packed with a superficially porous silica-based reversed-phase support and loaded with a sample mixture comprising at least two components, with an aqueous mobile phase comprising less than 10% by volume of at least one additive, wherein the presence of the additive in the mobile phase leads to an increased column lifetime, as compared with the lifetime observed in the absence of the additive, all conditions being equal.

2. The method of claim 1, wherein the presence of the additive in the mobile phase leads to a higher retention of at least one component of the mixture, as compared with the retention observed for the same component of the mixture in the absence of the additive, all other conditions being equal.

3. A method according to claim 1 or 2, further comprising detecting at least one of the components of the mixture as it elutes from the column as a solution in the mobile phase.

4. A method according to claim 3, wherein the method is a method for analysis of at least one component of the mixture.

5. A method according to claim 1 or 2, further comprising collecting at least one component of the mixture in a distinct fraction as it emerges from the column as a solution in the mobile phase.

6. A method according to claim 4, wherein the method is a method for preparative isolation of at least one component of the mixture.

7. A method according to claim 1 or 2, wherein the additive is a neutral, polar, fluorinated organic modifier.

8. A method according to claim 7, wherein the fluorinated organic modifier is a polyfluorinated alcohol.

9. A method according to claim 8, wherein the polyfluorinated alcohol is selected from the group consisting of 2,2,2-trifluoroethanol; 1,1,1,3,3,3-hexafluoroisopropanol; and combinations thereof.

10. A method according to claim 1 or 2, wherein the mobile phase has a pH between 2 and 11.

11. A method according to claim 1 or 2, wherein the mobile phase has a pH between 6 and 8.

12. A method according to claim 1 or 2, wherein the mobile phase further comprises a modifier selected from the group consisting of a buffering agent, an ion-pairing agent, a multivalent cation binding agent, a surfactant, a water-soluble organic solvent, and combinations thereof.

13. A method according to claim 1 or 2, wherein the HPLC column is run using an isocratic elution.

14. A method according to claim 1 or 2, wherein the HPLC column is run using a gradient elution.

15. A method according to claim 1 or 2, wherein the components of the mixture are polypeptides.

16. A method according to claim 1 or 2, wherein the components of the mixture are polynucleotides.

17. A method according to claim 1 or 2, wherein the components are DNA fragments and wherein the mobile phase further comprises at least one ion-pairing agent, at least one multivalent cation binding agent, and at least one water-soluble organic solvent.

18. A method according to claim 16, wherein the ion-pairing agent is a trisubstituted ammonium salt, the multivalent cation binding agent is EDTA, and the water-soluble organic solvent is acetonitrile.